PEDESTRIAN CROSSWALKS DIVISION 3 GUIDELINES

PURPOSE: Both pedestrians and motorists in the State of North Carolina have rights and responsibilities on the roadway. Pedestrians must obey signals and yield to motorists if not crossing at an intersection or a crosswalk. Conversely, motorists are required to yield to pedestrians at crosswalks and when crossing at intersections and driveways marked or unmarked. In other parts of the country, this law works well and pedestrians are protected. In North Carolina, the rights of pedestrians are not as respected by motorists. This fact creates the potential for accidents and injury with the improper placement of crosswalks. Excessive use of signs and pavement markings can substantially reduce the effectiveness of such devices. A consistent application of this policy will serve both the motorist and pedestrian within the Division.

PROCESS: Your traffic safety concern or request will be formalized by the staff member you have contacted. That person will work with you and gather the pertinent facts and help clearly define the problem and seek a solution. Each request will be evaluated and based on engineering judgment recommendations will be presented.

POLICY:

1) The Manual on Uniform Traffic Control Devices (MUTCD) shall set the guidelines for your request of any pedestrian treatments.

2) Speed, vehicular and pedestrian volumes, accident records, sight obstructions and demographic analysis shall be reviewed when considering pedestrian crosswalk installations.

3) Absent supporting engineering data, that clearly indicates the need for a pedestrian crosswalk, intersections will remain unmarked.

4) Pedestrian crosswalks shall only be placed in an area that shows to have pedestrian activity based on engineering judgment.

5) Marking of pedestrian crosswalks shall be established by analyzing the "Vehicle Gap Time". The "Vehicle Gap Time" is the total number of gaps between vehicular traffic (that are equal to or exceed the required pedestrian crossing time of three feet per second) recorded during the average five minute period in the Peak Hour.

6) Pedestrian crosswalks shall not be located on arterial roads or roads with a speed limit greater than 35 MPH unless in conjunction with signalization or as approved by the Division Traffic Engineer

7) Pedestrian crosswalks shall only be placed at intersections, unless a midblock crossing is warranted. (See midblock crossing warrants)

8) Any of the following conditions may warrant pedestrian crosswalks:

   a) Those locations adjacent to and along established pedestrian routes to and from a school.

   b) Locations adjacent to community centers, libraries, and other high use public facilities.

   c) Locations adjacent to public parks.

   d) Locations where accident records, sight obstructions and/or pedestrian volume (see No. 5) warrants the installation.

   e) Locations where significant numbers of handicapped or senior citizens cross a street.

   f) Location is part of the local adopted pedestrian plan.

CROSSWALKS – MID-BLOCK (UNSIGNALIZED):

A Mid-Block Crosswalk shall be defined as any crosswalk that is not located within an intersection. It will be the standard practice of NCDOT to install Mid-Block Crosswalks based on an engineering study. All Mid-Block Crosswalks shall be signed and marked in compliance with the Manual on Uniform Traffic Control Devices (MUTCD), the North Carolina Supplement to the MUTCD, the current NCDOT Roadway Standard Drawings, and the standards herein.

POLICY:

1. Installation of a Mid-Block Crosswalk shall be made only after an NCDOT engineering study determines that other alternative traffic control measures are not justified and that a Mid-Block Crosswalk can enhance transportation operation and pedestrian safety.

2. Unless otherwise determined on the basis of the engineering study, Mid-Block Crosswalks should not be installed on roadways with a speed limit greater than 35 MPH.

3. Mid-Block Crosswalks should not be located within 300 feet of a non-signalized intersection and 400 feet of a signalized intersection, as to not interfere with the functionality of the intersection.

4. On street parking spaces should be eliminated adjacent to each Mid-Block Crosswalk to allow adequate visibility for motorists approaching and/or departing the crosswalk. Parking removal should include no less than 50 feet on each curbside approach lane to the Mid-Block Crosswalk and no less than 25 feet on each curbside exiting lane leaving the Mid-Block Crosswalk. If sidewalk bulb-outs are constructed in the parking lane, removal of on street parking may not be necessary.

5. Installations of refuge or safety islands should be installed for Mid-Block Crosswalks on multi-lane roadways if sufficient roadway width is available.

6. When Mid-Block crossings are approved by Division Staff- only in pavement pedestrian activated lighting shall be used in conjunction with this crossing. (see figure 2)

7. Mid-Block Crosswalks should not be installed on streets with an ADT volume exceeding 12,000 vehicles per day. If a raised pedestrian refuge median is provided the ADT should not exceed 15,000 vehicles per day.

8. A minimum pedestrian crossing volume of 15 pedestrians per hour in the vicinity of the proposed crosswalk, for at least any four hours of a typical day should be met in order to warrant a Mid-Block Crosswalk, unless otherwise determined by engineering judgment.

9. On-street signing should only be used if deemed adequate by an engineering study. If the in-street signs (R1-6, R1-6a) are used, the supports shall be constructed of a breakaway material as to reduce harm to the vehicle and the pedestrian. In-street signs shall be constructed of a non-metal material as to also reduce harm to the vehicle and the pedestrian.

RECOMMENDATIONS

1) Un-signalized Mid-Block Crosswalks should not be provided on streets where traffic volumes do not have gaps in the traffic stream long enough for a pedestrian to walk to the other side or to a median refuge. At locations with inadequate gaps that also meet MUTCD signalization warrants, consider a signalized Mid-Block Crosswalk. Also consider a signalized Mid-Block Crosswalk when the average wait time for pedestrians to cross is more than 60 seconds

2) On streets with continuous two-way left-turn lanes, provide a raised median pedestrian refuge with a minimum refuge length of 20 feet and a minimum width of 6 feet.

3) Provide raised median pedestrian refuge at Mid-Block Crosswalks where the total crossing width is greater than 60 feet.

4) Use high-visibility (ladder-style) crosswalk markings to increase visibility longitudinally.

5) Provide advance yield lines to reduce multiple threat collisions- 2003 MUTCD Figure 3B-15. (See figure 1)

6) Provide advanced crosswalk warning signs for vehicle traffic.

7) Use curb extensions to increase the visibility of the driver and the pedestrian and decrease the crossing distance for pedestrians. (see figure 4)

8) “Z” crossing configurations should be used for Mid-Block Crosswalks with medians wherever possible (see Figure 3). Provide an at-grade channel in median at a 45-degree angle toward advancing traffic to encourage pedestrians to look for oncoming traffic.

FIGURE 1:

Figure 3B-15. Examples of Yield Lines at Unsignalized Midblock Crosswalks

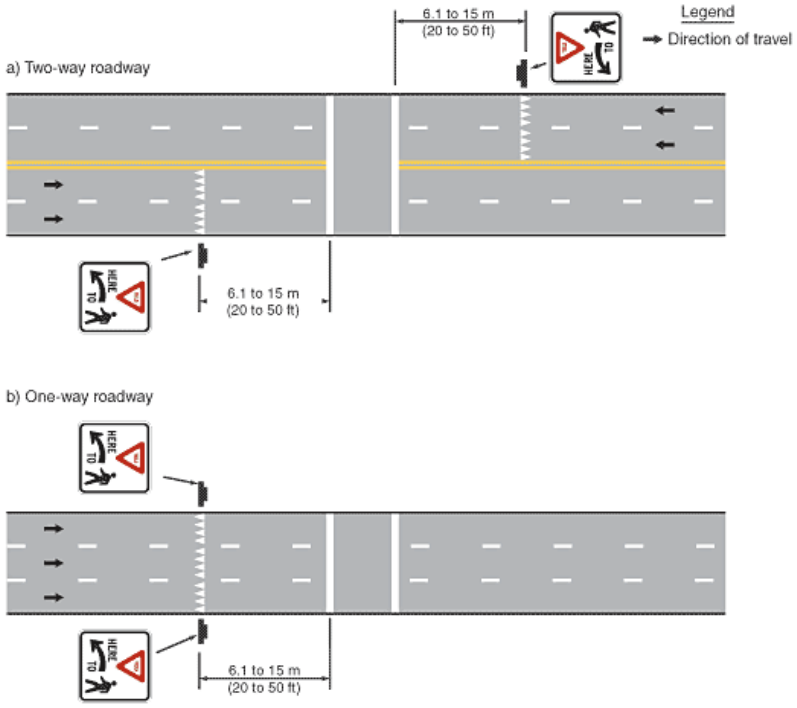

FIGURE 2: In-Pavement pedestrian activated lighting.

FIGURE 3: Staggered Mid-Block Crosswalk- Staggered crosswalks (or Z-crossings) are treatments in which the crosswalk is split by a median and is offset on either side of the median. This configuration forces pedestrians to turn in the median and face oncoming traffic before turning again to cross the second half of the crosswalk.

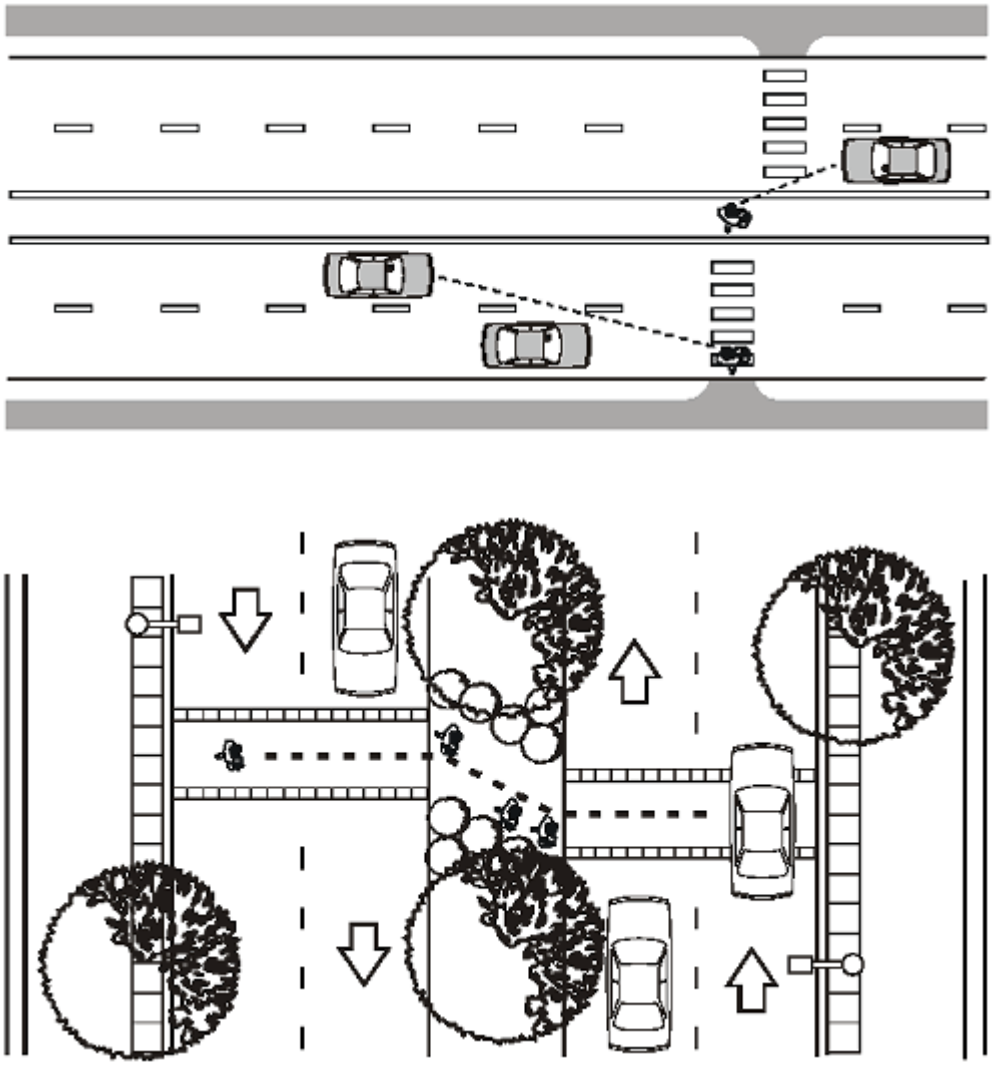

FIGURE 4: Curb extension and bulb-outs for Mid-Block Crossings and Intersections